

Claims:

1           1.       A method for managing a bill of material (BOM) for a product comprising parts  
2 contributed by a plurality of parties in a distributed system comprising a brand-owner, at least one  
3 first-tier supplier and at least one first-tier distributor, wherein said BOM contains information  
4 regarding said parts and suppliers of said parts; the method comprising:

5               monitoring the distributed system for an arrival of an input entered by a first party in said  
6 distributed system;

7               automatically determining whether said input represents an out-of-tolerance case;

8               communicating said input to a second party when said input represents said out-of-  
9 tolerance case;

10              determining whether an alternative plan is available when said input represents said out-of-  
11 tolerance case; and

12              optimizing a resolution in response to said input when said input does not represent said  
13 out-of-tolerance case,

14              whereby an automated collaboration between said first and second parties is enabled so  
15 that when said first party is unable to respond to said input, said input is communicated to said  
16 second party in order to allow said second party to process said input.

1           2.       The method of Claim 1 wherein said determining whether said input represents an  
2 out-of-tolerance case comprises applying a set of predetermined rules to said input.

1           3.       The method of Claim 2 further comprising performing a simulation for an impact  
2 of said input when said input represents said out-of-tolerance case.

1           4.       The method of Claim 3 further comprising communicating said alternative plan to  
2 said user.

1           5.       The method of Claim 4 wherein said determining at least one alternative plan  
2 comprises finding an alternative source for one of said parts.

1           6.       The method of Claim 5 wherein said distributed system comprises a second tier  
2 supplier and said input originates from said second tier supplier.

1           7.       The method of Claim 1 wherein said optimizing comprises issuing an instruction to  
2 increase a production of a part provided by said first-tier supplier when said input comprises an  
3 increase in a demand for said product.

1           8.       The method of Claim 7 wherein said optimizing comprises assessing an impact of  
2 said instruction to increase said production on a cost of said product.

1           9.       The method of Claim 1 wherein said optimizing comprises issuing an instruction to  
2 decrease a production of a part of said product when said input comprises a decrease in a demand  
3 for said product.

1           10.      The method of Claim 1 wherein said optimizing comprises issuing an instruction to  
2 decrease a production of a part of said product when said input comprises a decrease in a supply  
3 by said first-tier supplier.

1           11.      A computer program product for use in conjunction with a bill of material (BOM)  
2 for a product comprising parts contributed by a plurality of parties in a distributed system  
3 comprising a brand-owner, at least one first-tier supplier and at least one first-tier distributor,  
4 wherein said BOM contains information regarding said parts and suppliers of said parts; the  
5 computer program product comprising a computer readable storage medium and a computer  
6 program mechanism embedded therein, the computer program mechanism comprising:

7           instructions for monitoring for an arrival of an input entered by a first party in said  
8 distributed system;

9           instructions for determining whether said input represents an out-of-tolerance case;

10          instructions for communicating said input to a second party when said input represents  
11 said out-of-tolerance case;

12          instructions for determining whether an alternative plan is available when said input  
13 represents said out-of-tolerance case; and

14          instructions for optimizing a resolution in response to said input when said input does not  
15 represent said out-of-tolerance case.

1           12.    The computer program product of Claim 11 further comprising instructions for  
2 determining whether said input represents said out-of-tolerance case comprises instructions for  
3 applying a set of predetermined rules to said input.

1           13.    The computer program product of Claim 12 wherein said instructions for  
2 performing a simulation for an impact of said input when said input represents said out-of-  
3 tolerance case.

1           14.    The computer program product of Claim 13 further comprising instructions for  
2 communicating said alternative plan to said user.

1           15.    The computer program product of Claim 14 wherein said instructions for said  
2 determining at least one alternative plan comprises instructions for finding an alternative source  
3 for one of said parts.

1           16.    The computer program product of Claim 15 wherein said distributed system  
2 comprises a second tier supplier and said input originates from said second tier supplier.

1           17.    The computer program product of Claim 11 wherein said optimizing comprises  
2 issuing an instruction for increasing a production of a part provided by said first-tier supplier  
3 when said input comprises an increase in a demand for said product.

1           18.    The computer program product of Claim 17 wherein optimizing comprises  
2 assessing an impact of said instruction for increasing said production on a cost of said product.

1           19.    The computer program product of Claim 11 wherein said optimizing comprises  
2 issuing an instruction to decrease a production of a part of said product when said input  
3 comprises a decrease in a demand for said product.

1           20.    The computer program product of Claim 11 wherein said optimizing comprises  
2 issuing an instruction to decrease a production of a part of said product when said input  
3 comprises a decrease in a supply by said first-tier supplier.

1           21.    A method for managing a bill of material (BOM) for a product comprising parts  
2 contributed by a plurality of parties in a distributed system comprising a brand-owner, at least one  
3 first-tier supplier, one second-tier supplier, and one first-tier distributor, wherein said BOM  
4 contains information regarding said parts and suppliers of said parts; the method comprising:  
5           monitoring the distributed system for an input entered by a first party in said distributed  
6 system;  
7           automatically determining whether said input represents an out-of-tolerance case;  
8           optimizing a resolution in response to said input when said input does not represent an  
9 out-of-tolerance case, and  
10          communicating said input to a second party in said distributed system when said input  
11 represents an out-of-tolerance case;  
12          whereby an automated collaboration between said first and second parties is enabled so  
13 that when said first party is unable to respond to said input, said input is communicated to said  
14 second party to allow said second party to process said input.

1           22.    The method of Claim 21 further comprising notifying a user when said input  
2 represents an out-of-tolerance case.

1           23.    The method of Claim 21 wherein said first party comprises a first tier supplier in  
2 said distributed system.

1           24.    The method of Claim 23 wherein said second party comprises a second tier  
2 supplier in said distributed system.

1           25.    The method of Claim 23 wherein said second party comprises said brand-owner.

1           26.    The method of Claim 21 further comprising determining at least one alternative  
2 plan when said input represents an out-of-tolerance case.

1           27.    The method of Claim 26 further comprising communicating said alternative plan to  
2 a user.

1           28.    The method of Claim 21 wherein said determining whether said input represents an  
2 out-of-tolerance case comprises applying a set of rules to said input.

1           29.    The method of Claim 28 further comprising simulating an impact of said input on  
2 said distributed system.

1           30.    The method of Claim 29 wherein said determining at least one alternative plan  
2 comprises finding an alternative source for one of said parts.

1           31.    The method of Claim 21 wherein said optimizing comprises changing a design  
2 specification of said product. .

1           32.    The method of Claim 21 wherein said optimizing comprises obtaining a subset of  
2 said parts from an alternative source.

33.    The method of Claim 32 wherein said alternative source comprises a safety stock.

1           34.    The method of Claim 21 wherein said optimizing comprises issuing an instruction  
2 to increase a production of a part provided by said first-tier supplier when said input comprises an  
3 increase in a demand for said product.

1           35.    The method of Claim 34 wherein said optimizing comprises assessing an impact of  
2 said instruction to increase said production on a cost of said product.

1           36.    The method of Claim 21 wherein said optimizing comprises issuing an instruction  
2 to decrease a production of a part of said product when said input comprises a decrease in a  
3 demand for said product.

1           37.    The method of Claim 21 wherein said optimizing comprises issuing an instruction  
2 to decrease a production of a part of said product when said input comprises a decrease in a  
3 supply by said first-tier supplier.

1           38.    A computer program product for use in conjunction with a bill of material (BOM)  
2 for a product comprising parts contributed by a plurality of parties in a distributed system

3 comprising a brand-owner, at least one first-tier supplier, one second-tier supplier, and one first-  
4 tier distributor, wherein said BOM contains information regarding said parts and suppliers of said  
5 parts, the computer program product comprising a computer readable storage medium and a  
6 computer program mechanism embedded therein, the computer program mechanism comprising:  
7 instructions for monitoring for an input entered by a first party in said distributed system;  
8 instructions for determining whether said input represents an out-of-tolerance case;  
9 instructions for communicating said input to a second party in said distributed system  
10 when said input represents an out-of-tolerance case; and  
11 instructions for optimizing a resolution in response to said input when said input does not  
12 represent an out-of-tolerance case.

1 39. The computer program product of Claim 38 further comprising instructions for  
2 notifying a user when said input represents an out-of-tolerance case.

3 40. The computer program product of Claim 38 wherein said first party comprises a  
4 first tier supplier in said distributed system.

5 41. The computer program product of Claim 40 wherein said second party comprises a  
6 second tier supplier in said distributed system.

7 42. The computer program product of Claim 38 wherein said second party comprises  
8 said brand-owner.

9 43. The computer program product of Claim 38 further comprising instructions for  
10 determining at least one alternative plan when said input represents an out-of-tolerance case.

1 44. The computer program product of Claim 43 further comprising instructions for  
2 communicating said alternative plan to a user.

3 45. The computer program product of Claim 38 wherein said instructions for  
4 determining whether said input represents an out-of-tolerance case comprises instructions for  
5 applying a set of rules to said input.

1           46.     The computer program product of Claim 45 further comprising instructions for  
2     simulating an impact of said input on said distributed system.

1           47.     The computer program product of Claim 46 wherein said instructions for  
2     determining at least one alternative plan comprises instructions for finding an alternative source  
3     for one of said parts.

1           48.     The computer program product of Claim 38 wherein said optimizing comprises  
2     changing a design specification of said product. .

1           49.     The computer program product of Claim 38 wherein said optimizing comprises  
2     obtaining a subset of said parts from an alternative source.

1           50.     The computer program product of Claim 49 wherein said alternative source  
2     comprises a safety stock.

1           51.     The computer program product of Claim 38 wherein said optimizing comprises  
2     issuing an instruction for increasing a production of a part provided by said first-tier supplier  
3     when said input comprises an increase in a demand for said product.

1           52.     The computer program product of Claim 51 wherein said optimizing comprises  
2     assessing an impact of said instruction for increasing said production on a cost of said product.

1           53.     The computer program product of Claim 38 wherein said optimizing comprises  
2     issuing an instruction for decreasing a production of a part of said product when said input  
3     comprises a decrease in a demand for said product.

1           54.     The computer program product of Claim 38 wherein said optimizing comprises  
2     issuing an instruction for decreasing a production of a part of said product when said input  
3     comprises a decrease in a supply from said first-tier supplier.

1           55.     The computer program product of Claim 38 further comprising:  
2     instructions for initiating a seller DA (decision assistant) when said input is related to a  
3     sale of said product; and

4 instructions for initiating a buyer DA when said input is related a procurement of said  
5 parts.

1 56. The computer program product of Claim 55 further comprising:

2 instructions for initiating a planner DA when said input requires a change to a production  
3 plan of said product; and  
4 instructions for initiating a finance DA when said input requires a financial decision  
5 making.

1 57. A computer system for a bill of material (BOM) for a product comprising parts  
2 contributed by a plurality of parties in a distributed system, the computer system comprising:

3 a rules engine comprising a set of rules applicable to an input;  
4 an optimization engine comprising a database of alternative sources of said parts for  
5 determining an alternative plan in response to said input; and  
6 a server layer comprising instructions for servicing application programs and maintaining a  
7 BOM database.

8 58. The computer system of Claim 57 wherein said server layer comprises:

9 an applications server comprising said instructions for servicing application programs; and  
10 a database server comprising said instructions for maintaining said BOM database.